

§ 437.23

will not reevaluate that safety element to the extent its use is within its approved envelope. As part of the application process, the FAA will evaluate the integration of that safety element into vehicle systems or operations.

(d) *Inspection before issuing a permit.* Before the FAA issues an experimental permit, an applicant must make each reusable suborbital rocket planned to be flown available to the FAA for inspection. The FAA will determine whether each reusable suborbital rocket is built as represented in the application.

(e) *Other requirements.* The FAA may require additional analyses, information, or agreements if necessary to protect public health and safety, safety of property, and national security and foreign policy interests of the United States.

PROGRAM DESCRIPTION

§ 437.23 Program description.

(a) An applicant must provide—

(1) Dimensioned three-view drawings or photographs of the reusable suborbital rocket; and

(2) Gross liftoff weight and thrust profile of the reusable suborbital rocket.

(b) An applicant must describe—

(1) All reusable suborbital rocket systems, including any structural, flight control, thermal, pneumatic, hydraulic, propulsion, electrical, environmental control, software and computing systems, avionics, and guidance systems used in the reusable suborbital rocket;

(2) The types and quantities of all propellants used in the reusable suborbital rocket;

(3) The types and quantities of any hazardous materials used in the reusable suborbital rocket;

(4) The purpose for which a reusable suborbital rocket is to be flown; and

(5) Each payload or payload class planned to be flown.

(c) An applicant must identify any foreign ownership of the applicant as follows:

(1) For a sole proprietorship or partnership, identify all foreign ownership,

(2) For a corporation, identify any foreign ownership interests of 10% or more, and

(3) For a joint venture, association, or other entity, identify any participating foreign entities.

FLIGHT TEST PLAN

§ 437.25 Flight test plan.

An applicant must—

(a) Describe any flight test program, including estimated number of flights and key flight-safety events.

(b) Identify and describe the geographic coordinates of the boundaries of one or more proposed operating areas where it plans to perform its flights and that satisfy § 437.57(b) of subpart C. The FAA may designate one or more exclusion areas in accordance with § 437.57(c) of subpart C.

(c) For each operating area, provide the planned maximum altitude of the reusable suborbital rocket.

OPERATIONAL SAFETY DOCUMENTATION

§ 437.27 Pre-flight and post-flight operations.

An applicant must demonstrate how it will meet the requirements of § 437.53(a) and (b) to establish a safety clear zone and verify that the public is outside that zone before and during any hazardous operation.

§ 437.29 Hazard analysis.

(a) An applicant must perform a hazard analysis that complies with § 437.55(a).

(b) An applicant must provide to the FAA all the results of each step of the hazard analysis required by paragraph (a) of this section.

§ 437.31 Verification of operating area containment and key flight-safety event limitations.

(a) An applicant must identify, describe, and provide verification evidence of the methods and systems used to meet the requirement of § 437.57(a) to contain its reusable suborbital rocket's instantaneous impact point within an operating area and outside any exclusion area. The description must include, at a minimum—

(1) Proof of physical limits on the ability of the reusable suborbital rocket to leave the operating area; or

(2) Abort procedures and other safety measures derived from a system safety engineering process.

(b) An applicant must identify, describe, and provide verification evidence of the methods and systems used to meet the requirements of § 437.59 to conduct any key flight-safety event so that the reusable suborbital rocket's instantaneous impact point, including its expected dispersions, is over unpopulated or sparsely populated areas, and to conduct each reusable suborbital rocket flight so that the re-entry impact point does not loiter over a populated area.

§ 437.33 Landing and impact locations.

An applicant must demonstrate that each location for nominal landing or any contingency abort landing of the reusable suborbital rocket, and each location for any nominal or contingency impact or landing of a component of that rocket, satisfies § 437.61.

§ 437.35 Agreements.

An applicant must enter into the agreements required by § 437.63, and provide a copy to the FAA.

§ 437.37 Tracking.

An applicant must identify and describe each method or system used to meet the tracking requirements of § 437.67.

§ 437.39 Flight rules.

An applicant must provide flight rules as required by § 437.71.

§ 437.41 Mishap response plan.

An applicant must provide a mishap response plan that meets the requirements of § 437.75(b).

Subpart C—Safety Requirements

§ 437.51 Rest rules for vehicle safety operations personnel.

A permittee must ensure that all vehicle safety operations personnel adhere to the work and rest standards in this section during permitted activities.

(a) No vehicle safety operations personnel may work more than:

(1) 12 consecutive hours,

(2) 60 hours in the 7 days preceding a permitted activity, or

(3) 14 consecutive work days.

(b) All vehicle safety operations personnel must have at least 8 hours of rest after 12 hours of work.

(c) All vehicle safety operations personnel must receive a minimum 48-hour rest period after 5 consecutive days of 12-hour shifts.

§ 437.53 Pre-flight and post-flight operations.

A permittee must protect the public from adverse effects of hazardous operations and systems in preparing a reusable suborbital rocket for flight at a launch site in the United States and returning the reusable suborbital rocket and any support equipment to a safe condition after flight. At a minimum, a permittee must—

(a) Establish a safety clear zone that will contain the adverse effects of each operation involving a hazard; and

(b) Verify that the public is outside of the safety clear zone before and during any hazardous operation.

§ 437.55 Hazard analysis.

(a) A permittee must identify and characterize each of the hazards and assess the risk to public health and safety and the safety of property resulting from each permitted flight. This hazard analysis must—

(1) Identify and describe hazards, including but not limited to each of those that result from—

(i) Component, subsystem, or system failures or faults;

(ii) Software errors;

(iii) Environmental conditions;

(iv) Human errors;

(v) Design inadequacies; or

(vi) Procedural deficiencies.

(2) Determine the likelihood of occurrence and consequence for each hazard before risk elimination or mitigation.

(3) Ensure that the likelihood and consequence of each hazard meet the following criteria through risk elimination and mitigation measures: